Name:

at1113exam: Expand, factor, and solve quadratics (v329)

1. Expand the following expression into standard form.

$$(8x + 5)(8x - 5)$$

$64x^2 - 40x + 40x - 25$

$64x^2 - 25$

2. Solve the equation.

$$(7x - 8)(5x + 2) = 0$$

$x = \frac{8}{7}$ $\quad$ $x = \frac{-2}{5}$

3. Expand the following expression into standard form.

$$(5x + 6)(7x + 3)$$

$35x^2 + 15x + 42x + 18$

$35x^2 + 57x + 18$

4. Expand the following expression into standard form.

$$(9x + 7)^2$$

$81x^2 + 63x + 63x + 49$

$81x^2 + 126x + 49$

5. Solve the equation.

$$5x^2 + 7x + 15 \;=\; 2x^2 - 4x + 5$$

$$3x^2 + 11x + 10 = 0$$
$$(3x + 5)(x + 2) = 0$$
$$x = \frac{-5}{3} \qquad x = -2$$

6. Factor the expression.

$$25x^2 - 64$$

$$(5x + 8)(5x - 8)$$

7. Factor the expression.

$$x^2 - 4x - 12$$

$$(x + 2)(x - 6)$$

8. Solve the equation with factoring by grouping.

$$8x^2 + 12x + 10x + 15 \;=\; 0$$

$$(4x + 5)(2x + 3) = 0$$
$$x = \frac{-5}{4} \qquad x = \frac{-3}{2}$$